ABSTRACT

Haptic rendering of three-dimensional soft bodied objects for virtual interactions implemented by forming a three dimensional occupancy map of voxels, forming the surface of and bounding an object, forming a multi-dimensional coordinate

5   system, defining minimum and maximums distances of one voxel neighboring voxels defining multi-dimensional maximum offsets that an occupied point can maintain relative to its center, detecting when the minimums or maximums of distance and/or offsets are violated, and in response thereto adjusting to satisfy minimum and maximum for distance and offsets, and repeating the detecting and adjustment steps for

10 the entire occupancy map until there are essentially no violations.

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